

ROOTING CERTAIN BROAD-LEAF EVERGREEN CUTTINGS BY IMMERSION IN A HORMONE-FUNGICIDE SOLUTION

EDWARD W. SCHULTZ

Calorwash Nursery, Inc.

Aurora, Oregon 97002

Since manufacture of indolebutyric acid and Dip-and-Grow rooting aids were banned in 1978 by the Environmental Protection Agency it was imperative that we save our dwindling supply of these compounds and go back to using naphthaleneacetic acid. Oregon plant propagators did a lot of squirming and screaming; as a result we have some good news and some bad news. IBA has been released in Oregon for five years; that is the good news. The bad news is — most of the supply of this material in this country was sent to Europe.

Cuttings can be treated by dipping the base in a hormone powder, or in a concentrated solution or by total immersion. I will address my remarks to the latter method. This is a report on the use of naphthaleneacetic acid (NAA) as the active ingredient.

There are four logical reasons for its use:

1. Faster sticking of cuttings, it saves one operation.
2. Cheaper than IBA.
3. IBA may be hard to purchase.
4. *More uniform rooting; it probably does not wash off leaf bases.*

The procedure for making the solution:

1. Use four gallons of water
2. Add four tablespoons of Captan
3. Add two teaspoons Benlate
4. Add two teaspoons NAA from a bottle of Alpha 800 Holly Dip. This is the same material holly branches are dipped in for leaf retention.

We see no evidence of damage to plants regardless of how strong Captan is applied. Benlate may have to be discontinued because it has five problems which are under investigation: 1. may be carcinogenic; 2. may be phytotoxic; 3. may be spermatogenic; 4. may cause fish kill; 5. may kill earthworms.

On some original research in using IBA and NAA, I found some basic differences between them. IBA caused greater callus formation than NAA while NAA seemed to activate the plant to form xylem or wood tissue. This led me to the use of the im-

mersion treatment, reasoning that I wanted action from the top downward.

Species that responded by giving rapid and uniform rooting include the following: *Viburnum davidii*; English Ivy; Laurel (3 species); *Cotoneaster dammeri*, *C. dammeri* 'Lowfast' and *C. microphylla* US; All cultivars of heather; *Berberis thunbergii* 'Red Pygmy' (summer cuttings only); azaleas; *Skimmia japonica*; *Aucuba japonica*.

If red spider or aphids are present a tablespoon of Clorox per gallon of solution is added.

Even though the above plants are considered easy to propagate, the use of this treatment gives uniformity of rooting and reduces rooting time by about $\frac{1}{3}$.

We are now testing harder-to-root broadleaf evergreens by using our immersion method first and then dipping the base in Hormodin #3 or Hormex 8 or 16.

Preliminary trials in 1978 with pyramidal arborvitae using immersion treatment plus Hormodin #3 resulted in nearly 100% rooting if taken after January 1st.

Tam junipers also rooted well with this double treatment. *Juniperus horizontalis* cultivars were damaged and rooted best with Hormodin #3 only.

One note of caution: NAA is a bud repressant. A slight overdose may cause buds to remain dormant, especially in *Viburnum davidii*.

SUMMARY

Many broad-leaf evergreens root uniformly and faster when treated by total immersion in a solution containing NAA

Addition of IBA in powder form at the base of hard-to-root broadleaf and coniferous cuttings show promise for further experimentation.

Surface insect control with Clorox added to the solution seemed to cause no apparent decrease in the rooting response.

Increasing NAA dosage may inhibit new growth.